

1 Claims:

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3 1. A method of communicating information within a
4 physical link layer of a packet based communication
5 system, comprising the steps:

6 a) Employing a physical link layer
7 transmitter to substitute an additional
8 input data field within an idle data field
9 of a data stream transmitted within the
10 packet based communication system ; and

11 b) Employing a physical link layer receiver
12 to extract the additional input data field
13 without corrupting information contained
14 within the data stream.

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16 2. The method of claim 1 wherein the step of substituting
17 an additional input data field within an idle data
18 field comprises the steps:

19 a). Detecting one or more idle data field
20 characters; and

21 b) Replacing the one or more idle data field
22 characters with one or more physical link
23 layer data characters.

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25 3. The method of claim 2 wherein the one or more idle
26 data field characters to be replaced are located
27 within two or more of the idle data fields.

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29 4. The method of claim 2 or claim 3 wherein the step of
30 extracting the additional input data field without
31 corrupting information contained within the data
32 stream comprises the steps of:

33 a) Detecting one or more physical link layer
34 data characters; and

- 1 b) Extracting and replacing the one or more
2 physical link layer data characters with
3 idle field characters.
4
- 5 5. The method of any of claim 2 to claim 4 wherein the
6 step of replacing the one or more idle field data
7 characters with the physical link layer data
8 characters comprises replacing one or more idle field
9 data characters with a start data insertion
10 multiplexer character.
11
- 12 6. The method of claim 5 wherein the step of replacing
13 the one or more idle field data characters with the
14 physical link layer data characters further comprises
15 replacing one or more idle field data characters with
16 a data control character.
17
- 18 7. The method of claim 5 or claim 6 wherein the step of
19 replacing the one or more idle field data characters
20 with the physical link layer data characters further
21 comprises replacing one or more idle field data
22 characters with an additional input data character.
23
- 24 8. The method of any of claim 2 to claim 7 wherein the
25 step of replacing one or more idle data field
26 characters with the physical link layer data
27 characters further comprises the step of replacing one
28 or more idle field data characters with an end input
29 data character.
30
- 31 9. The method of any of claim 5 to claim 7 wherein the
32 step of detecting the physical link layer data
33 comprises activating a data extraction de-multiplexer.

1 when the receiver detects one or more start data
2 insertion multiplexer characters.

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4 10.A packet based communication system comprising one or
5 more transmitters, one or more transmission media and
6 one or more receivers wherein at least one of the one
7 or more transmitters comprises a data insertion
8 multiplexer for generating and inserting physical link
9 layer data, and at least one of the one or more
10 receivers comprises a data extraction de-multiplexer
11 for detecting and extracting the physical link layer
12 data.